Optics & Laser Technology

Index to Volume 24 (1992)

No 1 (February) pp 1–56
No 2 (April) pp 57–120
No 3 (June) pp 121–184
No 4 (August) pp 185–248
No 5 (October) pp 249–312
No 6 (December) pp 313–376

Article Index

February (pp 1–56)

Study of a thermal source using two-beam interference
N. Barakat, A.M. Hamed, F. Sharaf 23
Measurement of three-dimensional rigid body motion by multiple exposure speckle photography: use of uncollimated beam illumination in free space geometry
A. Kumar, K. Singh 27
Study of some characteristics of the plasma generated during a CO_2 laser beam cutting process
K. Danisman, B.S. Yilbas, A. Gorur, R. Davies, C. Ciftlikli, Z. Yilbas, F. Begh 33
Studies of the optogalvanic effect in a commercial caesium hollow cathode lamp and its use for tuning pulsed dye lasers
A. Duckworth, R.S. Adrain, B.A. Tozer 39
Improved correlation discrimination in a multi-object bipolar joint transform correlator
M.S. Alam, M.A. Karim 45
Interferometric inspection of glass shell laser targets
R.C. Bapna, R.L. Verma, D.N. Joshi 51

April (pp 57–120)

An interferometric linear in-plane position transducer
M. Reynolds, V. Toal 59
Beam quality and efficiency of high-average-power multirod lasers
M. Kumkar, B. Wedel, K. Richter 67
Chirp reduction in three-cavity semiconductor laser diodes
H. Ghafouri Shiraz, C.Y.J. Chu 73
Characteristic pathlength Fresnel number equations and ideal lens wavefront Kirchhoff formulation: analysis of focused Gaussian beam diffraction fields
H.G. Kraus 77
A new theta modulation multiplexing scheme for computer-generated holograms
K.W. Wong, L.M. Cheng 89
Experimental power loss measurements of broken $LiNbO_3$ waveguides
R.C. Gauthier 93
Sensitivity studies on certain optical techniques used to find *n*, *k* and relative thicknesses for thin films
L. Ward 97

June (pp 121–184)

Optical testing of large windows for laser applications
K.G. Leib, B.J. Pernick 123
Holographic image subtraction using a polarization technique
D. Choudhury, P.N. Puntambekar, A.K. Chakraborty 129
Design considerations for a fibre-optic based polarimeter
P.R. Smith, C.B. Tear, N.R. Barratt, H. Thomason 135
Birefringent fibre-optic pressure sensor
R.C. Gauthier, J. Dhliwayo 139
Investigation of light scattering from rough periodic surfaces — numerical solutions
Y.Y. Fan, V.M. Huynh 145
A new technique for spatially resolved thermal lensing measurements
R. Paugstadt, M. Bass 151
Photorefractive sensitivity characterization of a BSO-type crystal by anisotropic self-diffraction
P.A.M. Dos Santos 155

August (pp 185–248)

Single LED based dual wavelength referenced optical fibre sensor system using intensity modulation
J.M. Senior, G. Murtaza, A.I. Stirling, G.H. Wainwright 187
BGO crystalline fibres
G.P. Pazzi, P. Fabeni 193
Performance analysis of an optical device for cylindrical flow visualizations
J.P. Prenel, R. Porcar 197
Holographic moiré phase reinforcement procedure to obtain variable sensitivity surface topographic mapping: extension to phase stepping
P.K. Rastogi, L. Pflug 203
Measurement of surface coordinates and slopes by shearography
C.J. Tay, H.M. Shang, A.N. Poo, M. Luo 209
Optical properties of diamond-like films deposited by laser ablation
A. Richter, M. Klose 215
A simple wavemeter with crossed dispersion
T. Krustev, A. Kebedjiev 219
Surface roughness inspection of cold-rolled aluminium by laser light reflection
K.-E. Peiponen, R. Silvennoinen, Cong Gu, T. Asakura, K. Ikonen 223

October (pp 249–312)

Holographic particle image velocimetry (HPIV)
P.J. Bryanston-Cross, M. Funes-Gallanzi, C. Quan, T.R. Judge 251
Tilt measurement using digital speckle shear interferometry
R.S. Sirohi, A. R. Ganesan, B. C. Tan 257
Cerium dioxide thin film optical waveguides
P.F. Wahid, K.B. Sundaram, P.J. Sisk 263
The influence of ultra-violet cut-off filters on the performance of a 300 W Cr:Nd:GGG slab laser
Qitao Lü, Shalei Dong 267
A compact TEA CO_2 laser for field-based spectrochemical analysis of geological samples
W. Hardjoutomo, H. Munechika, H. Kurniawan, I. Hattori, T. Kobayashi, K. Kagawa 273
Matched filters and quasiphase-only filters recorded in silver halide (sensitized) gelatin
B. Janowska-Dmoch, K. Chalasinska-Macukow, J. Piliszek 279

Article Index

(October continued)

Further studies of the sensitivities attainable in using three optical functions to calculate *n*, *k* and thickness for thin films
L. Ward 285

New technique for controlling the degree of coherence of two light beams
X.Y. Zou, L. J. Wang, T.P. Grayson, L. Mandel 289

December (pp 313–376)

Review of non-diffracting Bessel beam experiments
M.R. Lapointe 315

Operational characteristics of a dye Q-switch for a pulsed ruby laser
T. Thevar, J. Watson 323

Some considerations on the design of a high-power N_2 laser
T. Baby, T. Ramachandran, K. Sathiandan, V.P.N. Nampoori 329

Refractive index distribution measurements by means of spectrally-resolved white-light interferometry
A.L. Guerrero, C. Sáinz, H. Perrin, R. Castell, J. Calatroni 333

Assessment of the quality of reedbeds using holomicroscopic moiré
P.K. Rastogi, L. Pflug, P. Hainard 341

Temperature-stable polished fibre-optic coupler
B.S. Zafirova, K.P. Panajotov, A. Tz. Andreev 345

A simplified model for second-harmonic generation in uniaxial crystals: phase matching condition
K.F. Lee, H.B. Ahmad 349

Excitation efficiency measurement in multimode solid-state lasers
F. Hollinger, R. Niedrig, J. Unruh 353

A simple thermal phase stabilizer for real-time optical fibre holographic interferometry
R.K.Y. Chan, A.S.K. Cheng, W.K. Chow, J.B. Brown, S.J. Rogers 357

Author Index

Adrain, R.S.	39	Hattori, I.	273	Quan, C.	251
Ahmad, H.B.	349	Hollinger, F.	353		
Alam, M.S.	45	Huynh, V.M.	145	Ramachandran, T.	329
Andreev, A.Tz.	345			Rastogi, P.K.	39
Asakura, T.	223	Ikonen, K.	223	Reynolds, M.	59
				Richter, A.	215
Baby, T.	329	Janowska-Dmoch, B.	279	Richter, K.	67
Bapna, R. C.	51	Joshi, D.N.	51	Rogers, S. J.	357
Barakat, N.	23	Judge, T.R.	251		
Barratt, N.R.	135			Sainz, C.	333
Bass, M.	151	Kagawa, K.	273	Sathiandan, K.	329
Begh, F.	33	Karim, M.A.	45	Senior, J.M.	187
Brown, J.B.	357	Kebedjiev, A.	219	Shang, H.M.	209
Bryanston-Cross, P.J.	251	Klose, M.	215	Sharaf, F.	23
		Kobayashi, T.	273	Silvennoinen, R.	223
Calatroni, J.	333	Kraus, H. G.	77	Singh, K.	27
Castell, R.	333	Krustev, T.	219	Sirohi, R.S.	257
Chakraborty, A.K.	129	Kumar, A.	27	Sisk, P.J.	263
Chalasinska-Macukow, K.	279	Kumkar, M.	67	Smith, P.R.	135
Chan, R.K.Y.	357	Kurniawan, H.	273	Stirling, A.I.	187
Cheng, A.S.K.	357			Sundaram, K.B.	263
Cheng, L.M.	89	Lapointe, M.R.	315		
Choudhury, D.	129	Lee, K.F.	349	Tan, B.C.	257
Chow, W.K.	357	Leib, K.G.	123	Tay, C.J.	209
Ciftlikli, C.	33	Low, K.S.	349	Tear, C.B.	135
		Lu, Q.	267	Thevar, T.	323
Danisman, K.	33	Luo, M.	209	Thomason, H.	135
Davies, R.	33			Toal, V.	59
Dhliwayo, J.	139	Mandel, L.	289	Tozer, B.A.	39
Dong, S.	267	Munechika, H.	273		
Dos Santos, P.A.M.	155	Murtaza, G.	187	Unruh, J.	353
Duckworth, A.	39				
		Nampoori, V.P.N.	329	Verma, R.L.	51
Fabeni, P.	193	Niedrig, R.	353		
Fan, Y.Y.	145			Wahid, P.F.	263
Funes-Gallanzi, M.	251	Panajotov, K.P.	345	Wainwright, G.H.	187
		Paugstadt, R.	151	Wang, L.J.	289
Ganesan, A.R.	257	Pazzi, G.P.	193	Ward, L.	97, 285
Gauthier, R.C.	93, 139	Peiponen, K.-E.	223	Watson, J.	323
Gorur, A.	33	Pernick, B.J.	123	Wedel, B.	67
Grayson, T.P.	289	Perrin, H.	333	Wong, K.W.	89
Gu, C.	223	Pflug, L.	39		
Guerrero, A.L.	333	Piliszek, J.	279	Yilbas, B.S.	33
		Poo, A.N.	209	Yilbas, Z.	33
Hainard, P.	39	Porcar, R.	197		
Hamed, A.M.	23	Prenel, J.P.	197	Zafirova, B.S.	345
Hardjoutomo, W.	273	Puntambekar, P.N.	129	Zou, X.Y.	289

Keyword Index

Airy patterns
Windows, Fourier transforms 123

Aluminium
Surface roughness, Reflection 223

Amplitude control
Coherence, Degree of coherence 289

BGO-fibres
Crystalline fibre growth, Optical fibres 193

Beam quality
Lasers (multirod), Laser power 67

Bessel beams
Non-diffracting beams, Optical systems 315

Bi_{12} TiO_{20} crystals
Photorefractive sensitivity, Photorefractive materials 155

Blood glucose
Polarization modulation, Fibre-optic sensors 135

Keyword Index (continued)

Blumlein-circuits
N_2 laser, Transverse discharge 329
Broken waveguides
Power loss, Waveguides ($LiNbO_3$) 93

CeO_2
Optical waveguides, Thin films 263
Coherence
Degree of coherence, Amplitude control 289
Computer-generated holograms
Holography, Multiplexing 89
Cr:Nd:GGG
Slab lasers, Solarization 267
Crystalline fibre growth
Optical fibres, BGO-fibres 193
Crystals
Non-linear optics, Optical materials 349

Degree of coherence
Coherence, Amplitude control 289
Diamonds
Thin films, Laser ablation 215
Diffraction
Speckle photography, Multiple exposure 27
Dye Q-switches
Lasers (ruby), Q-switch performance 323

Electron densities
Laser cutting, surface plasmas 33
Error parallelepipeds
Thin films, Optical constants 97, 285
Excitation efficiency
Lasers 353

Fibre couplers
Fibre optics 345
Fibre optics
Sensors, LEDs 187
Fibre couplers 345
Fibre-optic sensors
Polarization modulation, Blood glucose 135
Field-based analysis,
Lasers (compact TEA CO_2), Laser microprobe analysis 273
Flow visualization
Laser light sheets, Optical systems 197
Fourier transforms
Windows, Airy patterns 123
Fresnel numbers
Gaussian beams, Kirchhoff diffraction formulation 77
Fringes
Thermal sources, Interference 23

Gaussian beams
Fresnel numbers, Kirchhoff diffraction formulation 77
Glass shells
Laser fusion, Targets 51

Holographic particle image velocimetry
Holography, Lenses (diffraction limited) 251
Holography
Computer-generated holograms, Multiplexing 89
Image processing, Polarization 129
Holographic particle image velocimetry, Lenses (diffraction limited) 251
Optical fibres, Phase stabilization 357

Holomicroscopic moiré
Interferometry, In-plane displacements 39

Image processing
Holography, Polarization 129
In-plane displacements
Holomicroscopic moiré, Interferometry 39
Interference
Thermal sources, Fringes 23
Interferometers
Wavemeters, Monochromators 219
Interferometry
Position transducers, Speckle 59
Speckle, Measurement 257
Refractive index, Transparent media 333
Holomicroscopic moiré, In-plane displacements 39

Joint transform correlators
Target detection 45

Kirchhoff diffraction formulation
Fresnel numbers, Gaussian beams 77

LEDs
Fibre optics, Sensors 187
Lamps
Optogalvanic effect, Laser tuning 39
Laser microprobe analysis
Lasers (compact TEA CO_2), Field-based analysis 273
Laser ablation
Thin films, Diamonds 215
Laser crystals
Thermal lensing 151
Laser cutting
Surface plasmas, Electron densities 33
Laser fusion
Glass shells, Targets 51
Laser light sheets
Flow visualization, Optical systems 197
Laser power
Lasers (multirod), Beam quality 67
Laser tuning
Optogalvanic effect, Lamps 39
Lasers
Excitation efficiency 353
Lasers (compact TEA CO_2)
Field-based analysis, Laser microprobe analysis 273
Lasers (multirod)
Beam quality, Laser power 67
Lasers (ruby)
Dye Q-switches, Q-switch performance 323
Lenses (diffraction limited)
Holography, Holographic particle image velocimetry 251
Light scattering
Reflection, Surface roughness 145

Matched filters
Phase recording, Silver-halide sensitized gelatin 279
Measurement
Interferometry, Speckle 257
Monochromators
Wavemeters, Interferometers 219
Multiple exposure
Speckle photography, Diffraction 27
Multiplexing
Holography, Computer-generated holograms 89

N_2 laser
Blumlein-circuits, Transverse discharge 329

Non-diffracting beams
Bessel beams, Optical systems 315
Non-linear optics
Crystals, Optical materials 349

Optical constants
Thin films, Error parallelepipeds 97
Thin films, Error parallelepipeds 285
Optical fibres
Pressure sensors, Polarization 139
Crystalline fibre growth, BGO-fibres 193
Phase stabilization, Holography 357
Optical materials
Crystals, Non-linear optics 349
Optical systems
Flow visualization, Laser light sheets 197
Bessel beams, Non-diffracting beams 315
Optical waveguides
Thin films, CeO_2 263
Optogalvanic effect
Lamps, Laser tuning 39

Phase recording
Matched filters, Silver-halide sensitized gelatin 279
Phase stabilization
Optical fibres, Holography 357
Photorefractive materials
Photorefractive sensitivity, Bi_{12} TiO_{20} crystals 155
Photorefractive sensitivity
Photorefractive materials, Bi_{12} TiO_{20} crystals 155
Polarization
Image processing, Holography 129
Optical fibres, Pressure sensors 139
Polarization modulation
Blood glucose, Fibre-optic sensors 135
Position transducers
Speckle, Interferometry 59
Power loss
Waveguides ($LiNb0_3$), Broken waveguides 93
Pressure sensors
Optical fibres, Polarization 139

Q-switch performance
Lasers (ruby), Dye Q-switches 323

Reflection
Light scattering, Surface roughness 145
Surface roughness, Aluminium 223
Refractive index
Transparent media, Interferometry 333

Sensors
Fibre optics, LEDs 187
Shearography
Surface coordinates, Slopes 209
Silver-halide sensitized gelatin
Matched filters, Phase recording 279
Slab lasers
Cr:Nd:GGG, Solarization 267
Slopes
Shearography, Surface coordinates 209
Solarization
Slab lasers, Cr:Nd:GGG 267
Speckle
Position transducers, Interferometry 59
Interferometry, Measurement 257
Speckle photography
Diffraction, Multiple exposure 27
Surface coordinates
Shearography, Slopes 209
Surface plasmas
Laser cutting, Electron densities 33

Keyword Index (continued)

Surface roughness
Light scattering, Reflection 145
Aluminium, Reflection 223

Target detection
Joint transform correlators 45
Targets
Glass shells, Laser fusion 51
Thermal lensing
Laser crystals 151
Thermal sources
Interference, Fringes 23
Thin films
Error parallelepipeds, Optical constants 97
Laser ablation, Diamonds 215
Optical waveguides, CeO_2 263
Error parallelepipeds, Optical constants 285
Transparent media
Refractive index, Interferometry 333
Transverse discharge
N_2 laser, Blumlein-circuits 329

Waveguides ($LiNbO_3$)
Power loss, Broken waveguides 93
Wavemeters
Monochromators, Interferometers 219
Windows
Fourier transforms, Airy patterns 123

Book Reviews 114, 174, 238, 305

Conference Reports 178, 241, 307, 366

Coming Events 54, 116, 181, 244, 309, 368

News: R&D 106, 161, 227, 292, 360
Industry 108, 162, 231, 294, 362
Products 110, 168, 234, 296
Meetings 112